

Infection control and pet therapy

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Can Therapy Dogs Improve Pain and Satisfaction After Total Joint Arthroplasty? A Randomized Controlled Trial

Carl M. Harper , Yan Dong, Thomas S. Thornhill, John Wright, John Ready, Gregory W. Brick, George Dyer

Results

Patients in the treatment group had lower VAS scores after each physical therapy session with a final VAS score difference of 2.4 units (animal-assisted therapy VAS, 1.7; SD, 0.97 [95% CI, 1.4–2.0] versus control VAS, 4.1; SD, 0.97 [95% CI, 3.8–4.4], $p < 0.001$) after the third physical therapy session. Patients in the treatment group had a higher proportion of top-box HCAHPS scores in the following fields: nursing communication (33 of 36, 92% [95% CI, 78%–98%] versus 69%, 25 of 36 [95% CI, 52%–84%], $p = 0.035$; risk ratio, 1.3 [95% CI of risk ratio, 1.0–1.7]; risk difference, 23% [95% CI of risk difference, 5%–40%]), pain management (34 of 36, 94% [95% CI, 81%–99%], versus 26 of 36, 72% [95% CI, 55%–86%], $p = 0.024$; risk ratio, 1.3 [95% CI of risk ratio, 1.1–1.6]; risk difference, 18% [95% CI of risk difference, 5%–39%]). The overall hospital rating also was greater in the treatment group (0–10 scale) (9.6; SD, 0.7 [95% CI, 9.3–9.8] versus 8.6, SD, 0.9 [95% CI, 8.3–8.9], $p < 0.001$).

Conclusions

The use of therapy dogs has a positive effect on patients' pain level and satisfaction with hospital stay after total joint replacement. Surgeons are encouraged to inquire about the status of volunteer-based animal-assisted therapy programs in their hospital as this may provide a means to improve the immediate postoperative recovery for a select group of patients having total joint arthroplasty.

TABLE 9. Review of Selected References on Animal-Assisted Activities

Author, Year, (Ref. No.)	Type	Methodology	Findings
Abate SV, 2011 (71)	Hospitalized heart-failure patients	Subjects were provided the opportunity to participate in canine-assisted ambulation (walking with a therapy dog). Case subjects were compared with a historical population of 537 controls.	Distance ambulated increased from 120.2 steps in a randomly selected, stratified historical sample to 235.07 in the canine-assisted ambulation study sample ($P < .0001$). Subjects unanimously agreed that they enjoyed canine-assisted ambulation and would like to participate in canine-assisted ambulation again.
Banks MR, 2002 (72)	Long-term care	Randomized clinical trial, three groups of 15 patients (no animal-assisted therapy; animal-assisted therapy once/week; animal-assisted therapy 3x/week); pre-post assessment	Residents volunteering for the study had a strong life-history of emotional intimacy with pets. AAA significantly reduced loneliness scores in comparison with the no animal-assisted therapy group.
Barak Y, 2001 (73)	Psychiatric ward	Randomized clinical trial of 20 patients, 10 with and 10 without animal-assisted therapy	Improvement was noted in both groups compared with baseline scores and were significantly more positive for the AAA group on both Total Social Adaptive Functioning Evaluation score and on the Social Functions subscale.
Barker SB, 2003 (74)	Fear in electroconvulsive therapy (ECT)	35 patients were assigned on alternate days to a 15-min animal-assisted therapy session (intervention), or 15-min session with magazines (control)	Animal-assisted therapy reduced fear and anxiety but had no demonstrated effect on depression.
Barker SB, 1998 (75)	Psychiatric patients	Self-reported, pre- and post-treatment crossover study that compared the effects of a single animal-assisted therapy session with those of a single regularly scheduled therapeutic recreation session.	Reductions in anxiety scores were found after the animal-assisted therapy session for patients with psychotic disorders, mood disorders, and other disorders. No significant differences found in reduction of anxiety.
Beck CE, 2012 (76)	Outpatient veterans	Animal-assisted therapy on Warriors in Transition (N = 24) attending an Occupational Therapy Life Skills program; pre-test, post-test nonrandomized control group study	Differences were not found between the groups on most measures; subjective reports of satisfaction with AAA.
Brodie SJ, 1999 (77)		Review	Potential benefits of pet therapy are considerable and nurses may assume



Pasteurella multocida: zoonotic cause of peritonitis in a patient undergoing peritoneal dialysis

R D London and E J B

REVIEW

Pasteurella multocida non-native joint infection after a dog lick: A case report describing a complicated two-stage revision and a comprehensive review of the literature

Philip W Lam BScPhm MD¹, Andrea V Page BSCh MSc MD FRCPC^{1,2}

PW Lam, AV Page. *Pasteurella multocida* non-native joint infection after a dog lick: A case report describing a complicated two-stage revision and a comprehensive review of the literature. Can J Infect Dis Med Microbiol 2015;26(4):212-217.

L'infection à *Pasteurella multocida* non indigène d'une articulation léchée par un chien : rapport de cas d'une révision compliquée en deux étapes et analyse bibliographique approfondie

Downloaded from [http://dx.doi.org/10.1016/S1473-3099\(14\)70895-3](http://dx.doi.org/10.1016/S1473-3099(14)70895-3)

Pasteurella multocida infection in solid organ transplantation



Eric S Christenson, Haitham M Ahmed, Christine M Durand

We present a case of fulminant *Pasteurella multocida* sepsis in a 66-year-old man who had undergone a renal transplant. Our patient lived with two dogs and a cat with which he was very close. We propose that his bacteraemia might have resulted from direct inoculation of *P multocida* via his cat licking the venous stasis ulcers on his legs. The patient's clinical course was complicated by cardiopulmonary failure and he ultimately succumbed to his infection. *P multocida* is a rare cause of infections in immunocompromised hosts, epidemiologically linked to exposure to cats, dogs, and other animals. This case of *P multocida* shows the importance of considering this organism in immunocompromised hosts presenting with severe infections, especially if their history shows exposure to domesticated or wild animals known to be potential carriers of this disease. In this Grand Round, we review the clinical features, epidemiology, treatment, and prognosis of *P multocida* infections with a focus on these features in patients who are immunosuppressed.

Lancet Infect Dis 2015; 15: 235-40

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Faecal *Escherichia coli* isolates from healthy dogs harbour CTX-M-15 and CMY-2 β -lactamases

Possible Transmission of *mcr-1*–Harboring *Escherichia coli* between Companion Animals and Human

Xue-Fei Zhang, Yohei Doi, Xi Huang, Hong-Yu Li, Lan-Lan Zhong, Kun-Jiao Zeng, Yan-Fen Zhang, Sandip Patil, Guo-Bao Tian

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CASE REPORT

Cluster of Infections Caused by Methicillin-Resistant *Staphylococcus pseudintermedius* in Humans in a Tertiary Hospital

Gustaf Starlander,^a Stefan Börjesson,^b Ulrika Grönlund-Andersson,^b Christian Tellgren-Roth,^c Åsa Melhus^a

Department of Medical Sciences/Section of Clinical Bacteriology, Uppsala University,^a Department of Animal Health and Antimicrobial Strategies, National Veterinary Institute,^b and Department of Immunology, Genetics and Pathology, Uppsala University,^c Uppsala, Sweden

REVIEW

Pasteurella species peritoneal dialysis-associated peritonitis: Household pets as a risk factor

Philippe Guillaume Poliquin MD FRCPC¹, Philippe Lagacé-Wiens MD FRCPC^{2,3}, Mauro Verrelli MD FRCPC⁴, David W. Allen MD⁵, John M. Embil MD FRCPC^{2,6}

PG Poliquin, P Lagacé-Wiens, M Verrelli, DW Allen, JM Embil. *Pasteurella* species peritoneal dialysis-associated peritonitis: Household pets as a risk factor. Can J Infect Dis Med Microbiol 2015;26(1):52-55.

La péritonite associée à la dialyse péritonéale causée par des espèces de *Pasteurella* : les animaux domestiques sont un facteur de risque

Animals in facilities

- Resident animals
- Animal assisted therapy
- Pet visitation
- Personal pet visitation
- Service animals
- Visiting programs

Animals in facilities

- Resident animals
- Animal assisted therapy
- Pet visitation
- Personal pet visitation
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Types of contact

Duration of contact

Handler knowledge/skill

Number of residents exposed

Species

Legal protection

Ability to control contact/movement

Health and behaviour assessment

Animals in facilities

- Resident animals
- **Animal assisted therapy**
- **Animal visitation**
- Personal pet visitation
- Service animals
- Visiting programs



Vet's Program Sends Unusual Visitor on Rounds



Normally "bratty," Petie is all business when he visits children.

By Kristin Davis
Veterinary Practice News

Telephones ring off the hook at the front desk of Akron Children's Hospital in Ohio as patients restlessly flip through magazines in the waiting room.

Even at Christmastime, it seems like an average day at the hospital—until 200-pound, 3-foot miniature horse-and-ponymix Petie trots through the revolving door into the lobby.

"Look mom, it's a horse!" a child says to his mother, who dismisses the idea that a horse could actually be inside a hospital ... until she turns around to see for herself. The front desk receptionist smiles knowingly.

Although Petie's presence once shocked staff members, he's now a hospital regular—even riding in the glass elevator to make his rounds from room to room to visit with children.

People may be startled when they first see Petie, but it doesn't take long for them to warm up to him, says David Miller, DVM, who provides medical treatment for the miniature horse at Victory Gallop, an equestrian center and non-profit organization.

Founded in 1995 by Dr. Miller, his wife Sue Miller and family friend Kim Gustely, Victory Gallop is a therapeutic program for children facing life-threatening illnesses, behavioral issues or emotional challenges.

The center is in Bath, Ohio, and started in David's backyard with just a single horse and rider. In just 12 years, the program has grown to 10 horses and 55 students per 12-week session.

The program received plenty of attention locally, even earning the founders a "Service Above Self" award from the Lake Erie Seminars in Port Clinton, Ohio in May.

Pony, Page 26





ORIGINAL ARTICLE

Characteristics of Programs Involving Canine Visitation of Hospitalized People in Ontario

Sandra L. Lefebvre, DVM; David Waltner-Toews, DVM, PhD; Andrew Peregrine, PhD, Diplomate EVPC, MRCVS; Richard Reid-Smith, DVM, DVSc; Leslie Hodge, MSc; J. Scott Weese, DVM, DVSc, Diplomate ACVIM

- Survey of all Ontario, Canada hospitals, 2004
 - 96.5% response rate
- Parallel survey of visitation dog owners
- 90% (201/ 223) hospitals permitted animal visitation
 - 27% of facilities not aware of all origins of animals

Screening Protocols*

- “Core” vaccination: 93%
 - Canine parvovirus, canine parainfluenza, distemper, hepatitis, rabies
- Additional vaccination:
 - Leptospirosis (11%), ‘kennel cough’ (7%)
- Deworming: 2%
- Temperament testing: 47%

* Owner reported

Patient Contacts*

- 73% allowed on bed
- 79% allowed to lick patients

* Owner reported

Observational Study

- Temperament issues
 - Husky too aggressive to examine
 - Pomeranian bite on upper lip
 - Chihuahua bite on hand*
 - Labrador scratch on arm*

- Visitation of patients in ICU and under contact precautions
- Physicians petting dog then immediately touching patients in ICU
- Touching animals while eating
- Feeding dog a treat by mouth
- Dogs drinking from toilets

- Hand hygiene
 - 0/ 75 healthcare workers that handled dogs performed hand hygiene before or after
 - ~4% (n>400) of patients practiced hand hygiene before handling dogs
 - Only 5% after

- About half of observed dogs licked patients
- ~25% of handlers held patients' hands
 - <4% of handlers performed hand hygiene between patients

Animals in Healthcare Facilities: Recommendations to Minimize Potential Risks

Rekha Murthy, MD;¹ Gonzalo Bearman, MD, MPH;² Sherrill Brown, MD;³ Kristina Bryant, MD;⁴ Raymond Chinn, MD;⁵ Angela Hewlett, MD, MS;⁶ B. Glenn George, JD;⁷ Ellie J.C. Goldstein, MD;⁸ Galit Holzman-Pazgal, MD;⁹ Mark E. Rupp, MD;¹⁰ Timothy Wiemken, PhD, CIC, MPH;⁴ J. Scott Weese, DVM, DVSc, DACVIM;¹¹ David J. Weber, MD, MPH¹²

TABLE 6. Allowable Uses of Animals in Healthcare (AHC) Facilities, Stratified by 4 Major Categories

Responses, No. (%)	Service Animals, No. (%)			Animal-Assisted Activities, No. (%)			Personal Pet Visitation, No. (%)			Research Animals, No. (%)		
	Yes	No	NA	Yes	No	NA	Yes	No	NA	Yes	No	NA
US facilities 280 (83)	267 (95)	8 (3)	5 (2)	249 (89)	24 (9)	7 (3)	113 (40)	158 (57)	9 (3)	99 (35)	155 (56)	26 (9)
Non-US facilities 24 (7)	20 (83)	4 (17)	0	16 (67)	7 (29)	1 (4)	5 (20)	18 (75)	1 (5)	14 (58)	9 (38)	1 (4)
Unknown 33 (10)	19 (58)	10 (30)	4 (12)	14 (42)	15 (46)	4 (12)	3 (9)	26 (79)	4 (12)	17 (52)	10 (30)	6 (18)
Total 337 (100)	306 (90)	22 (7)	9 (3)	279 (82)	46 (14)	12 (4)	121 (36)	202 (60)	14 (4)	130 (38)	174 (52)	33 (10)

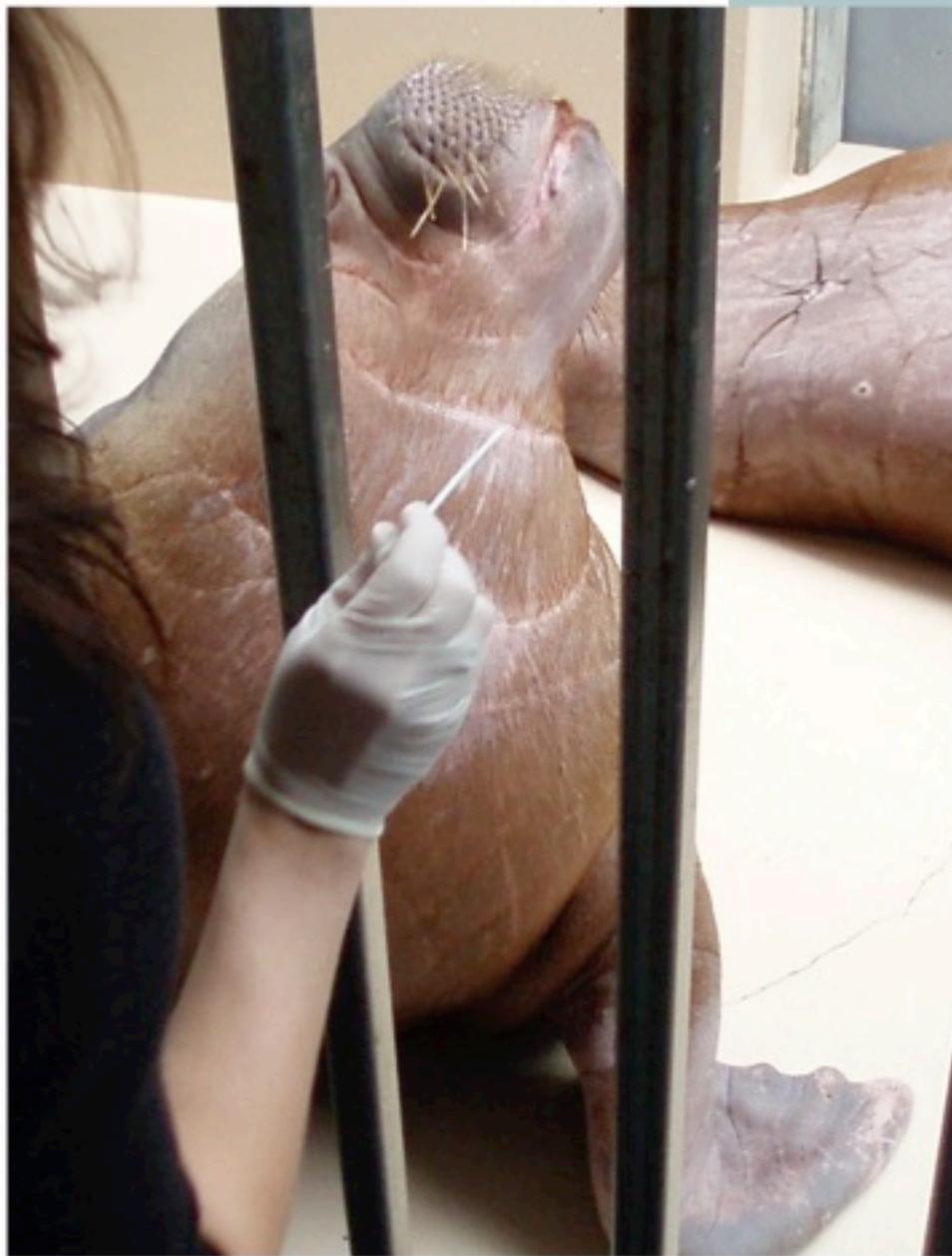
NOTE. NA, not available.

Do animals involved in
visitation programs carry
zoonotic pathogens?

A decorative graphic consisting of a solid teal horizontal bar at the top, followed by a white horizontal bar, and then three thin, parallel teal horizontal lines on the right side of the white bar.

- *C. difficile*: 58%
 - Including ribotype 027/ NAP1
- *Salmonella*: 3%
- Extended spectrum cephalosporin resistant *E. coli*: 4%
- *Giardia*: 7%
- *Toxocara canis*: 2%
- *Pasteurella canis/multicida*: 22%/ 7%

- Group A streptococci: 0%
- MRSA: 0%
- VRE: 0%
- Ringworm: 0%
- *Cryptosporidium* spp: 0%



Incidence of acquisition of methicillin-resistant *Staphylococcus aureus*, *Clostridium difficile*, and other health-care-associated pathogens by dogs that participate in animal-assisted interventions

Sandra L. Lefebvre, DVM, PhD; Richard J. Reid-Smith, DVM, DVSc;
David Waltner-Toews, DVM, PhD; J. Scott Weese, DVM, DVSc, DACVIM

- Dogs enrolled before starting visitation careers
 - Healthcare facilities (n=100)
 - Other facilities (ie schools) (n=100)
- Monthly sampling for MRSA, VRE, *E. coli*, *Salmonella*, *C. difficile*

Results

- 9% of exposed dogs acquired MRSA
 - 1% unexposed
 - All naturally decolonized by next visit
- *C. difficile* acquisition by
 - 15 unexposed dogs
 - 28 exposed dogs ($P=0.025$)
- 1 exposed dog acquired VRE

- MRSA risk factors
 - Healthcare centre visitation: OR 6.3
 - Visitation of children: OR 7.1
- *C. difficile* risk factors
 - Healthcare contact: OR 3.3
 - Visitation of children: OR 3.5
 - Antimicrobial treatment: OR 2.2
 - Antimicrobial treatment of someone in the house: OR 3.2

Nested Case-Control Study

- Positive/ negatives in healthcare group
- MRSA
 - Licked patients: OR 13.5
 - Fed treats by patients: OR 12.3
- *C. difficile*
 - Licked patients: OR 2.9
 - Sat on beds: OR 2.9
 - Ate feces: OR 0.12

Do visitation animals actually
cause disease?

A decorative graphic consisting of a solid teal horizontal bar at the top, followed by a white horizontal bar, and then three thin, parallel teal horizontal lines on the right side of the white bar.

There have been no reported outbreaks of disease attributed to visitation programs.....

There have been no reported outbreaks of disease attributed to visitation programs.....

but would the current system realistically detect animal involvement in disease?

A photograph of a person holding a white protest sign high above their head. The sign has handwritten text in black and red ink. The background shows a crowd of people and a large white dome building under a clear blue sky.

WHAT DO WE WANT?
EVIDENCE-BASED CHANGE
WHEN DO WE WANT IT?
AFTER PEER REVIEW

AJIC major articles

Guidelines for animal-assisted interventions in health care facilities

Writing Panel of the Working Group: Sandra L. Lefebvre, DVM, PhD,^a Gail C. Golab, PhD, DVM,^b E'Lise Christensen, DVM,^c Louisa Castrodale, DVM, MPH,^d Kathy Aureden, MS, CIC,^e Anne Bialachowski, RN, MS, CIC,^f Nigel Gurnley, DVM,^g Judy Robinson,^h Andrew Peregrine, DVM, PhD,^a Marilyn Benoit, RN,ⁱ Mary Lou Card, RN, CIC,^j Liz Van Horne, RN, CIC,^k and J. Scott Weese, DVM, DVSc^a

Schaumburg and Elgin, Illinois; New York, New York; Anchorage, Alaska; Guelph, Burlington, Ottawa, Hamilton, London, and Toronto, Ontario, Canada

INFECTION CONTROL & HOSPITAL EPIDEMIOLOGY

SHEA EXPERT GUIDANCE

Animals in Healthcare Facilities: Recommendations to Minimize Potential Risks

Rekha Murthy, MD;¹ Gonzalo Bearman, MD, MPH;² Sherrill Brown, MD;³ Kristina Bryant, MD;⁴ Raymond Chinn, MD;⁵ Angela Hewlett, MD, MS;⁶ B. Glenn George, JD;⁷ Ellie J.C. Goldstein, MD;⁸ Galit Holzmann-Pazgal, MD;⁹ Mark E. Rupp, MD;¹⁰ Timothy Wiemken, PhD, CIC, MPH;⁴ J. Scott Weese, DVM, DVSc, DACVIM;¹¹ David J. Weber, MD, MPH¹²

Recommendations

- **Facilities should have:**
 - **Written policy**
 - **Designated liaison**
 - **Training/program requirements**

- Species
 - Domesticated species
 - Good and predictable temperament
 - Good knowledge about infectious disease carriage
 - Ability to test/ assess
 - House trained
 - Living in households
- Dogs

A. Allow only domestic companion dogs to serve as animal-assisted activities animals. Cats are not included in the recommendation due to concerns for increased potential allergenicity, potential increased risk of bites and scratches, and lack of data demonstrating advantages over dogs.

C. Only dogs should be used (ie, exclude cats and other animals). Cats should be excluded because they cannot be trained to reliably provide safe interactions with patients in the healthcare setting.





- Sources
 - Not from shelters, pounds, pet stores
 - In household for at least 6 months
- Age
 - Dogs: \geq 1-2 years
- Temperament
 - Passed objective, standard temperament test conducted by trained personnel

- Animal health screening
 - Rabies vaccination
 - Annual veterinary examination
 - No deworming recommendations
 - No specific pathogen screening (ie MRSA, *Salmonella*...)
- Diet
 - No raw food or treats

- Restricted for ≥ 1 week following
 - Diarrhea
 - Vomiting
 - Sneezing, coughing
 - Antimicrobial, immunosuppressive therapy
 - Skin disease, SSTI
 - Potentially painful disorders
 - Fleas, external or internal parasites

- Temporary animal removal (re-assess)
 - Negative behavioural changes since last temperament test
 - Fearful response noted during visitation
 - Loss of sight or hearing

- Permanent animal removal
 - Any bite
 - Any aggressive behaviour

- **Handlers**
 - Undergo formal hospital volunteer training
 - Vaccination requirements consistent with those for healthcare workers at the facility
 - Training program regarding visitation activities
 - Syndromic restriction: self screening

- Pre-visit
 - Self-screen pets (syndromic)
 - Check for external parasites
 - Bath if visibly soiled coat
 - Clean leash/ collar
 - Leashed \leq 2 metres in length
 - Method to identify animals (ie scarf, badge, collar)

- Visitation procedures
 - Hand hygiene
 - Proper contacts
 - Safety, disease transmission
 - Only on beds with impermeable, disposable barrier
 - No contact with invasive devices, wounds, bandages...
 - No visitation of patients under enhanced precautions

- No visitation when patient is eating
- Explicit patient (and roommate) permission before entering room
 - Physician designation?
- Restrict to 1 hour (dog fatigue)

- No entrance to
 - ICU
 - Food preparation areas
 - Medication preparation areas
 - OR
 - Isolation
 - Neonatal nurseries
 - Potentially frightening areas

Mother Goose and Grimm

IF YOU DON'T WANT TO
CATCH A COLD, WASH
YOUR HANDS REGULARLY



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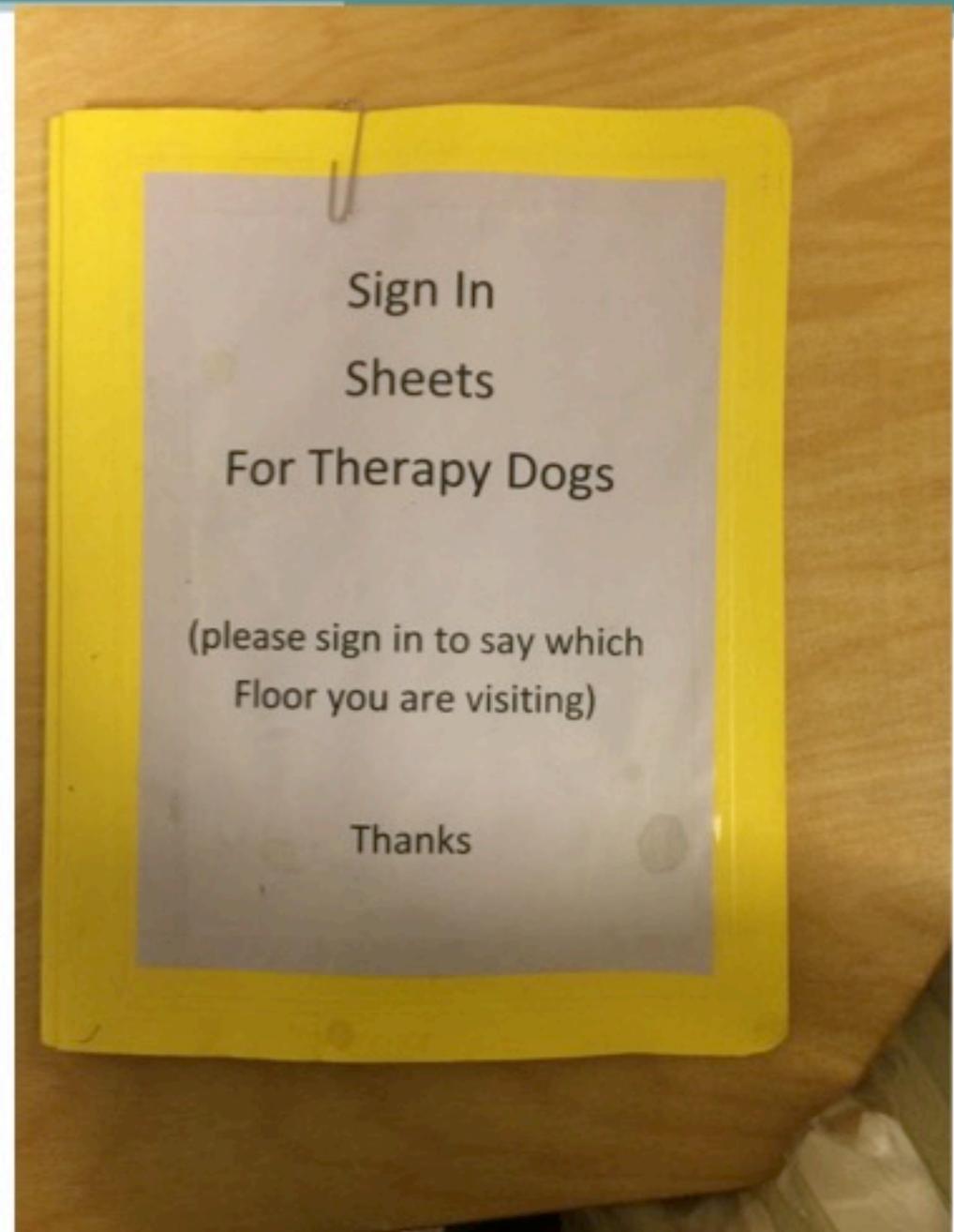
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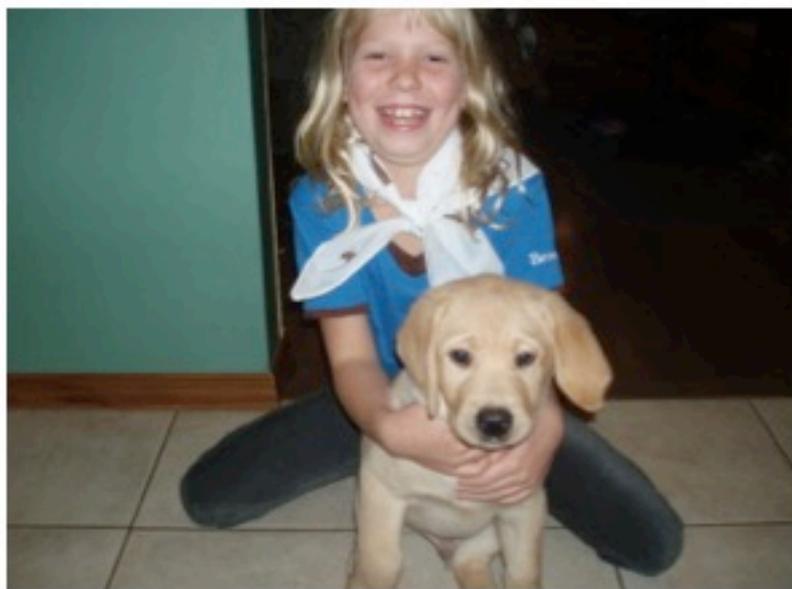


MAYBE THIS
DOESN'T APPLY
TO CATS.

- Hand hygiene
 - Patients: Before AND after animal contact
 - Handlers: Between rooms
 - Handlers carry hand sanitizer

- Contact tracing





The End



Questions?

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Coming Soon

September 22 **HARDWARE OR SOFTWARE? INTERVENTIONS FOR A SUSTAINABLE INFECTION CONTROL PROGRAM**

Prof. Joost Hopman, Radboud University, The Netherlands

September 26 *(Free Teleclass – Broadcast live from the annual conference of the Infection Prevention Society – www.ips.uk.net)*

E.M. COTTRELL LECTURE

Dr. Mary Woods, Academy of Social Sciences and Academy of Medical Sciences, UK

September 28 *(Free Teleclass – Broadcast live from the annual conference of the Infection Prevention Society – www.ips.uk.net)*

USING SCIENCE TO GUIDE HAND HYGIENE SURVEILLANCE AND IMPROVEMENT

Prof. Eli Perencevich, University of Iowa

September 29 **ADHERENCE ENGINEERING TO REDUCE CENTRAL LINE ASSOCIATED BLOODSTREAM INFECTIONS**

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